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Engineer Update

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Lt. Gen. Robert Flowers is the new Chief of Engineers.

New Chief's strength is people skill

Article by Bernard Tate
Photos by F.T. Eyre
Headquarters

(Lt. Gen. Robert B. Flowers took command of the U.S. Army Corps of Engineers in a ceremony on Oct. 23. On Nov. 7, he sat down with the "Engineer Update" editor for a discussion about himself and his plans for the next four years.)

Update: *You are the 50th Chief of Engineers. Each chief brings a unique style of leadership and a unique set of strengths and talents. What do you bring to the Corps?*

Flowers: I think my strengths are my people and communication skills. So I will try to emphasize those to build relationships, to empower the people of the organization, set the vision, and work hard at enabling the soldiers and civilians of this organization to develop and execute the strategy and the measurement tools we'll use.

Update: *What is the Army Transformation and what will it mean to the Corps?*

Flowers: The Army Transformation is the method by which the Army will evolve into the force that will support this country well into the future. The process involves recapitalization of forces that we currently have because they'll be around for

Continued on page 8

Fisher Houses provide a 'home away from home'

By Torrie McAllister
Europe District

The November groundbreaking ceremony for the new Fisher House at Landstuhl Regional Medical Center in Germany celebrated several firsts:

- The start of construction on the first Fisher House built overseas.
- The U.S. Army Corps of Engineers' first opportunity to support the non-profit Fisher Foundation.
- The Corps's first transatlantic interactive broadcast of a ceremony, which allowed distinguished Fisher Foundation guests in New York to participate live via satellite link from North Atlantic Division's (NAD) headquarters at Fort Hamilton, N.Y.

When the doors at Landstuhl's Fisher House open next summer, it will provide a "home away from home" in Europe for families while their loved ones receive major medical care at Landstuhl. The Fisher Foundation, started by philanthropists Zachery and Elizabeth Fisher, builds houses near military medical treatment centers because they know a family's love is the best medicine. Since 1990, the foundation has donated 26 Fisher Houses at 16 military installations and four Veterans Affairs hospitals.

A Fisher House for Europe became a priority for the foundation because Landstuhl Regional Medical Center is the major medical hub for the European Theater, covering Europe, Africa, and the Middle East. Injured sailors from the terrorist attack on the USS Cole were brought there. Families who come to stay near their injured loved ones need a convenient, comfortable place to stay.

Traditionally, the Fisher House Foundation builds its houses privately, then donates them to the respective military service or Veterans Affairs hospital to operate and maintain. But in Germany, where the land belongs to the host nation and construction standards differ, the Fisher Foundation and European Regional Medical Command asked the Corps to help them manage construction with the German government construction agency.

Europe District will make sure that the German Staatsbauamt Kaiserslauten fully understands Fisher requirements. The Staatsbauamt is the German state construction office that has host nation responsibility for design and construction.

"The Landstuhl Fisher House is special in many ways," Maj. Gen. Milton Hunter, the Corps' Deputy Commander, told a star-studded VIP crowd that included Lt. Gen. Larry Jordan, Deputy Commanding General of U.S. Army Europe, and all of the senior service surgeons in Europe. "It symbolizes the great generosity and patriotism of the Fisher family. It symbolizes transatlantic teamwork, and German-American partnership at its best.

"The Fisher Foundation has an outstanding standard design, proven to meet the needs of our service members everywhere they operate," Hunter continued. "Our challenge was to take a design based on conventional U.S. wood frame construction and build it in Germany where masonry construction is the norm. We asked the Staatsbauamt Kaiserslautern to partner with the Corps of Engineers and European Regional Medical Command to adapt the design and all its details for Germany.

"Key to success of the work was preservation of the Fisher House character at a price we could afford," Hunter said. "It's been a superb team effort. Together, Germans, Americans, and the Fisher Foundation will make this first Fisher House in Europe a model for others that may be built overseas. We all look forward to the ribbon-cutting next summer."

A highlight of the groundbreaking was participation of the Fisher family by satellite link. Zachary Fisher died last year; his nephews Arnold and Tony Fisher, and his great nephew Ken Fisher continue his legacy. Ken Fisher addressed the ceremony guests live from NAD Headquarters and watched the groundbreaking with NAD Commander Brig. Gen. Steven Rhoades and special guests. Arnold Fisher spoke by video.

Tele-engineer specialists at NAD combined their talents with Landstuhl's tele-medicine experts in Germany to provide the live, real-time interactive participation between New York and Germany.

"It's great to see the new synergy at work between telemedicine and tele-engineering," Hunter said. "It's a tribute to the innovative use of the interactive technologies that doctors and engineers now rely on."

This is an artist's rendering of the first Fisher House which will be built in Germany. (Artwork courtesy of Europe District)

Chief of Engineer's Holiday Message

I've received the best present

The holiday season is a traditional time to pause, reflect on the past, and look to the future. This past year was the Corps' 225th year of service to this great country. Throughout 2000, the *Engineer Update* published vignettes from the Corps' history which illustrated our value to the nation, and the courage, sacrifice, and ingenuity of Corps people.

Your achievements during the past year have unquestionably added to that history. Most impressive is how you have all borne up in the face of controversy and negative articles in the news media. You have not over-reacted to bad press, and I'm proud of that. Any organization as large as we are, and involved in as many activities as we are, is bound to face controversy. Despite the strain, you have continued to provide the very best engineering services to the armed forces and the nation.

Kosovo has long since fallen off the nation's news radar, but not for the Corps of Engineers. North Atlantic Division is still there, and its districts are taking turns sending teams to Central Europe to provide protection for U.S. peacekeepers, and to build quality of life projects to make the peacekeepers' lives healthier and more comfortable.

From barracks in Korea and at Fort Gordon, to a realistic Urban Combat Training Complex at Fort Knox and a new state-of-the-art medical center at Fort Bragg, and even futuristic assignments like the Space Command Headquarters Complex, and maintenance and testing facilities for the new F-22 fighter plane, the Corps of Engineers has continued to support our nation's military.

Even foreign forces have benefited. Albuquerque District is building facilities to support the German air force's Tornado fighter program in New Mexico. Europe District helped build a storage bunker in Siberia to store radioactive material removed from Russian nuclear weapons.

On the Civil Works side, the Corps has continued to build our nation. This year, we dedicated the Seven Oaks Dam, probably the last large-scale flood control dam the Corps will build in the foreseeable future. The project, managed by Los Angeles District, is a key piece of the Santa Ana River Mainstem Flood Control Project, which will provide flood protection to more than three million residents and 225,000 structures in the Los Angeles area.

The Port of Los Angles is expanding, and Los Angeles District recently deepened the channels and used 58 million cubic yards of dredged material to create the 590 acre landfill where Pier 400 will be built.

Although this year has been a quiet one for disasters, the Corps still pitched in to help those in need. After the Cerro Grande forest fire in New Mexico, the Corps provided temporary housing, and later built several flood protection projects. A Corps team deployed to Africa after severe floods to assess dam safety and the impact of water releases at hydroelectric dams on the Zambesi River. Our people at The Dalles Dam responded to a herbicide spill in Oregon, preventing the poison from entering the Columbia River and decimating the annual fish runs. They also worked hard to clean up the herbicide.

In short, I feel I've already received the best holiday present an engineer officer could wish for when I became the 50th Chief of Engineers. The past weeks have been a whirlwind of learning, and everything I've seen since Oct. 23 convinces me that in the coming year and beyond, you will continue to match anything that has gone before. Remember my charge to you. I expect every soldier and civilian to:

- Know your job.
- Be situationally aware.
- Stay healthy.
- Treat everyone with dignity and respect.

Equally important, keep your sense of humor, enjoy your families, and have fun.

Please remember that the holidays are a time of increased travel and greater stress, so be careful and take care of yourselves.

The Corps family wishes you a safe, joyous holiday season, and a happy, exciting New Year.

ROBERT B. FLOWERS
Lieutenant General, USA
Commanding

Insights

It's that wonderful time of the year!

By Col. Lowell Moore
Chaplain, U. S. Army Corps of Engineers

Ahhh, Christmas is almost here again! That wonderful time of the year when...

...children's' eyes sparkle with excitement and anticipation as they wonder what might lurk under the Christmas tree.

...parents wonder what happened to last year as they reach reluctantly for that little plastic card and plunge deeper in debt to avoid disappointing their excited children.

...the lights that worked perfectly when they were taken off the tree and placed carefully in a box just a year ago are now are all tangled and refuse to light.

...the Christmas trees that others buy look perfect, but you have to settle for an ugly thing that sheds needles and delights in the mess it makes on your carpet.

...people by the thousands invade the malls to engage in close-quarter combat shopping, trying to find that obligatory gift for someone they don't even like.

...families get together and gossip about the ones who couldn't be there.

...materialism reaches its peak with stores charging high prices so they can have after-Christmas sales and still reap a profit.

Ahhh, it's that wonderful time of the year!

On second thought, maybe it's not so wonderful after all.

Perhaps it would do us all some good to pause for a moment and remember how this crazy time of year began. It surely didn't have its beginning in what was described above. We need to remember the very humble and austere conditions surrounding the first Christmas, and remember that the real purpose of Christmas is not to promote materialism but to promote good will. We need to remember that Christmas didn't come to add frustration to our lives, but to provide peace to individuals living in a frustrating world. We need to remember Christmas is an opportunity to improve relationships, not fracture them.

If we would take a moment to reflect upon the original Christmas and remember its true purpose, it just might change the way we look at Christmas this year. We might remember...

...to take time out from our combat shopping to relax and enjoy a cup of coffee with a friend.

...to appreciate our children's' strengths and praise them instead of nagging them about their shortcomings.

...to call a shut-in relative who has been ignored far more than we intended.

...to sip the eggnog a little slower this year to give us more time to really hear what our spouse is sharing.

...to smile at the weary clerks even when their comments are a little curt.

...to reach a little deeper into our pockets when passing a Salvation Army kettle.

You know, I believe that Christmas has the potential to *really* be that wonderful time of the year that we all long for. I also believe our attitude will determine whether Christmas is a hectic time, or if it is wonderful. It has a lot to do with whether we view Christmas in the shadow of the original Christmas, or in the shadow of the dollar. Whether our focus is on the things under the Christmas tree, or on the people sitting around the Christmas tree. Whether our thoughts are on the spiritual, or on the earthly.

This year I'm going to do all I can to make Christmas "that wonderful time of the year," and I wish the same for you.

(The views expressed in this article are those of the author and do not reflect the official policy or position of the U.S. Army Corps of Engineers, the Department of the Army, the Department of Defense, or the U.S. Government.)

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Holiday Safety

The day the candied yams exploded

Article by Bernard Tate
Artwork by Alita Brown
Headquarters

I guess my family will always remember the Christmas when my wife's candied yams exploded.

I can hear it now — "Those must've been some *powerful* candied yams! What was it, your wife's special Jack Daniels recipe?"

Sure, it's funny now. But it wasn't funny when it happened.

My parents, sister, and brother-in-law came to visit us that Christmas. My wife had worked on a family dinner for most of the week, and she fixed the candied yams a couple of days in advance to finish baking on Christmas Day.

That afternoon she took the Pyrex baking dish of candied yams out of the refrigerator, set it on the stove to warm to room temperature, and turned on a heating unit to cook a pot of potatoes for mashed potatoes. Then she went outside to take a break, which left no one in the kitchen.

I was in the living room talking to my brother-in-law when I heard something sizzling. I said, "I don't think anything should be frying in there," and walked into the kitchen to check.

There sat the baking dish of candied yams on the stove, with a circular patch boiling in the middle. That didn't look right, so I stepped out on the deck and asked my wife, "Are the candied yams supposed to be boiling in here?"

She jumped up and said "Oh! I must've turned on the wrong unit when I started to boil the potatoes!"

We pulled the baking dish off the red-hot unit and hit the off switch. She gently rocked the baking dish back and forth to distribute the hot juices and stop the boiling, then we examined the candied yams to see if they were salvageable. I bent down for a close look and a deep whiff, and we decided they were still edible as long as no one scraped the bottom of the baking dish.

Then my wife set the candied yams aside on the counter to cool. She turned on the proper heating unit under the potatoes, went back outside, and I went back to the living room.

No one in the kitchen again, except my sister walking through on her way from the basement.

***BANG!*rattlerattlerattle!!**

My sister had just made it to the living room, and turned in time to see it happen.

"That dish of candied yams just exploded," she said in astonishment.

Everyone ran to the kitchen and, sure enough, the floor was littered with glass shrapnel, and candied yams were dripping off the counter. As near as we could figure out, the uneven heating and cooling set up stresses that were too much even for a Pyrex baking dish, and it blew itself to smithereens.

Of course, our goofy dog tried to eat a chunk of glass. My wife and I pried it out of his mouth, locked him in the bedroom, and cleaned up the mess. We swept the floor, scraped the glass-riddled candied yams into the trashcan, strained the glass shards out of the other potato pot, and that was that.

But I got to thinking — what if that baking dish had exploded while I had my face right down there next to it? Or while my wife was rocking the dish back and forth? Or while *anyone* was in the kitchen?

My family believes we were all protected by the grace of God, but whether you call it divine protection or luck or Christmas magic, there's a larger lesson here:

The holidays aren't as safe as we like to think.

My family's had other strange things happen around the holidays. One Christmas morning, my sister took a present to her friend next door. Our concrete front porch, steps, and sidewalk looked wet, but when my sister stepped on it she fell head-over-heels all the way down. It was actually *black ice*. Dad ran outside to her, hit the ice and crashed-and-burned all the way down, too. The cat jumped up on the porch to see what was going on, went *skitterskitter* and fell off the other side. Everyone was OK, including the cat, but it shook us all up.

Then one Christmas morning, after opening gifts, my father decided to burn the mass of wrapping paper in the basement fireplace. He accidentally knocked the flue shut, and filled the house with smoke.

One time, a few days before Christmas, something went wrong with my mother's left eye. It swelled and turned red and teary, and she said it felt like something was in it. But no one could find a thing. On Christmas Eve she got desperate and went to the emergency room, where a surgeon found a bunch of eyelashes that had rolled up *under* her eyelid, and removed them.

I used to get severe nosebleeds during the holidays from the dry furnace heat in our home.

And one Christmas Eve, while driving home to visit my family, the oilpan ran dry and stalled my car in the middle of nowhere. I had the car towed to a service station, then hitchhiked all the way home across Virginia.

I know that list makes my family sound like "The Three Stooges Meet Santa Claus," but it's not particularly unusual. The holidays are a high-risk season. Consider what we're up against. We're under much more stress from shopping and other preparations. We're on the road traveling more. We party more and drink more. We eat more, and our diet is different. People spend more time in the kitchen, the most dangerous room in the house. Our schedules are hectic, we're tired, and we don't take care of ourselves.

I won't go into a long list of dos and don'ts; no one could write them all, or remember them all. Just be more careful about what you do during the holiday season, and be more aware of what people are doing around you. Remember that the holidays are a stressful time with a higher accident rate and unusual hazards.

Like exploding candied yams.

Bottle message found in marsh

By Eric Kolber
Buffalo District

What started as the routine compliance inspection of a project turned into a storybook ending. When Paul Leuchner and Gary McDannell of Regulatory Branch and Ed Evans of Hamlin, N.Y., discovered a message in a bottle, they helped a local school project, and gained a better understanding of the Lake Ontario currents at Hamlin Beach State Park.

After watching the movie "Paddle to the Sea" and reading *The Twelve Million Dollar Note* by Robert Kraske, fifth grade students from Bob Andujar's class at Alexander Hamilton Elementary School in Tonawanda, N.Y., released their own message-laden bottles into Lake Ontario. The bottles each contained a note telling who launched it, a request for a reply, and a return address. The fifth-graders launched them from the Coast Guard dock at Fort Niagara in late fall 1999.

Leuchner, McDannell, and Evans were inspecting the Yanty Marsh project at Hamlin Beach several months later when they stumbled upon one of the bottles. McDannell said that he was "intrigued by it, since I'd recently seen the movie 'Message in a Bottle.'"

Eventually, 16 of the class's bottles were found in that area of Lake Ontario shoreline, three of them at Hamlin Beach State Park. Four bottles landed near Sandy Creek, four at Sandy Harbor Beach, and another at Kendall, N.Y. The lake waters carried them about 50 miles from their starting point at Fort Niagara.

Left to right, Gary McDannell, Paul Leuchner, and Ed Evans pose in Yanty Marsh with the message and the bottle they found. (Photo courtesy of Buffalo District)

Hamilton Elementary's project not only fulfilled their goal of eliciting responses from bottle finders, it also helped those involved with the work at the Yanty Marsh. The shoreline was deteriorating and threatening the marsh, a 90-acre rare Class 1 wetland. According to Evans, Deputy Town Supervisor for Hamlin, officials believed that impediments built along the shore in the 1970s caused the deterioration.

Instead, "the bottle proves just the opposite," and the class project "supplied information that will be used to help us save the rest of the marsh," said Evans.

According to Andujar, the students were excited by the unexpected beneficial nature of their experiment.

The Yanty Marsh project took place in late 1998. The marsh and its protective barrier beach were under assault by Lake Ontario waves. The Corps, along with the State Office of Parks, designed and oversaw construction of a low revetment to halt the beach erosion. McDannell and Leuchner were inspecting the progress of the project when they came across the message in a bottle from Hamilton Elementary School.

This is an artist's rendering of the proposed replacement span for the San Francisco-Oakland Bay Bridge. (Artwork courtesy of Sacramento District)

Team reviews California bridge plans

By Jim Taylor
Sacramento District

San Francisco would strangle without the San Francisco-Oakland Bay Bridge. Everyone has heard of the beautiful Golden Gate Bridge, but few outside the area know that the Bay Bridge, its less-famous, plainer sibling, actually carries more commuters and commerce.

Recently, the city and the California Department of Transportation (Caltrans) called on the U.S. Army Corps of Engineers to settle a controversy about the Bay Bridge. They asked Corps to use its experience and trusted analysis to evaluate proposed alternatives to improve the seismic safety of the bridge's east span. The city preferred a plan to retrofit the existing bridge, while Caltrans proposed a replacement span.

This is an important question for the area, with a lot riding on the outcome. The area is prone to earthquakes; the Loma Prieta 'quake in 1989 damaged the Bay Bridge and closed it for several weeks. So the request for Corps help came from the very top. The Federal Highway Administration, Caltrans, and San Francisco, working through the White House's National Economic Council, asked the Corps to serve as independent experts to evaluate key technical decisions made by Caltrans on the seismic retrofit of the east span, and the alternative plan to build a replacement span.

"We had 16 weeks to assemble a team of experts, gather and review the data, and prepare our report," said Col. Michael Walsh, District Engineer for Sacramento District. "We assembled a team of engineers and technical experts from across the Corps. They came from St. Paul, St. Louis, Philadelphia, Louisville, Tulsa, and Sacramento districts, and the South Pacific Division office. Three architect-engineer firms also helped the Corps with the analysis. They were HDR, Inc.; Quest Structures; and GEI Consultants, Inc."

Working under contract to Caltrans, the team evaluated technical assumptions, engineering analyses, seismic safety, and cost estimates that were contained in the existing data. Under the agreement, they did not generate any new data or conduct additional analyses.

That data analyzed by the Corps team included a variety of reports and technical analyses developed by Caltrans and San Francisco. "We looked at structural, seismic, geotechnical, and cost engineering reports," said Rick Poeppelman, a structural engineer from Sacramento District. "Specifically, we reviewed the technical feasibility of the retrofit design proposed by Caltrans, the decision to select a replacement bridge and not retrofit the existing bridge, and the design of the proposed self-anchored suspension span."

The existing east span of the bridge was completed in 1936. It extends from Oakland about 12,000 feet to Yerba Buena Island. It's a double deck roadway primarily supported by a steel truss superstructure.

The Corps review team made a dramatic trek on the San Francisco-Oakland Bay Bridge to take a first-hand look at its construction. (Photo courtesy of Sacramento District)

"We had concerns over Caltrans' retrofit approach regarding their use of an isolation strategy," said Jerry Gianelli, project manager for the review team. "There was no supporting documentation on why a flexible structure such as the east span with low seismic force demands should be stiffened by concrete encasement, then softened back to its original condition using isolation bearings. In addition, none of the data provided for analysis demonstrated that any retrofit alternative was analyzed that could meet the required level of earthquake safety needed for the bridge."

Caltrans proposed four different bridge types for the replacement bridge. These include a post-tensioned concrete span at the Oakland touchdown, a 1.5 mile concrete skyway structure, an asymmetrical self-anchored suspension main span supported by a single tower, and a post-tensioned concrete box-girder span to the Yerba Buena Tunnel. The Corps teams' review focused on the self-anchored suspension bridge (SAS) and the skyway structure.

The spans of the self-anchored suspension bridge are asymmetric with a 590-foot span west of the main tower and a 1,260-foot span east of the tower. The main tower principally carries the weight of the suspension bridge.

"We addressed the seismic safety of the replacement bridge in terms of its predicted performance during an earthquake," Gianelli said. "Because the design of the self-anchored suspension span isn't complete, we were unable to determine if it will meet the required earthquake safety standards. However, our review of the available data *does* show that Caltrans is moving along a design path to meet the seismic performance criteria established by the bridge's Seismic Advisory Board and the Engineering Design Advisory Panel."

"After four months of analyzing nearly 400 documents totaling 75,000 pages, it's our opinion that a replacement bridge is preferable to a retrofit of the East Span of the San Francisco-Oakland Bay Bridge," said Walsh. "A replacement alternative is the path that most quickly resolves the exposure of the public to the seismic vulnerabilities of the existing structure.

"This was a challenging and professionally rewarding effort," Walsh added. "In the end, we're confident that our work will help Caltrans provide the people of the San Francisco Bay Area a safe bridge."

Early chemical weapons sought at Aberdeen Proving Grounds

By Doug Garman
Baltimore District

Since June, a team of ordnance specialists have combed a small strip of land at Aberdeen Proving Ground (APG) in Maryland, searching for potentially dangerous remnants of the nation's chemical weapons arsenal.

APG officials, Baltimore District, and contractors are searching a 452-acre site that was once used for testing and training with chemical munitions. From 1920 to 1951, the U.S. Army Chemical School used this site to train soldiers in the use and firing of chemical munitions, handling and maintenance of chemical warfare equipment, and training in decontamination of contaminated materials and personnel.

From 1954 through 1976, the Army also maintained a Nike missile battery at the site. After decommissioning, the missile silos were decontaminated and filled with concrete, and some of the structures were demolished. Today, the remaining barracks serves as a field office for the ordnance search, called the Lauderick Creek Chemical Warfare Material Removal Project.

The site, a quarter mile wide and a mixture of woodlands and waist-high grassy fields, is bounded on the north by the APG property line, on the west by Maryland Route 755, and on the east by the Bush River.

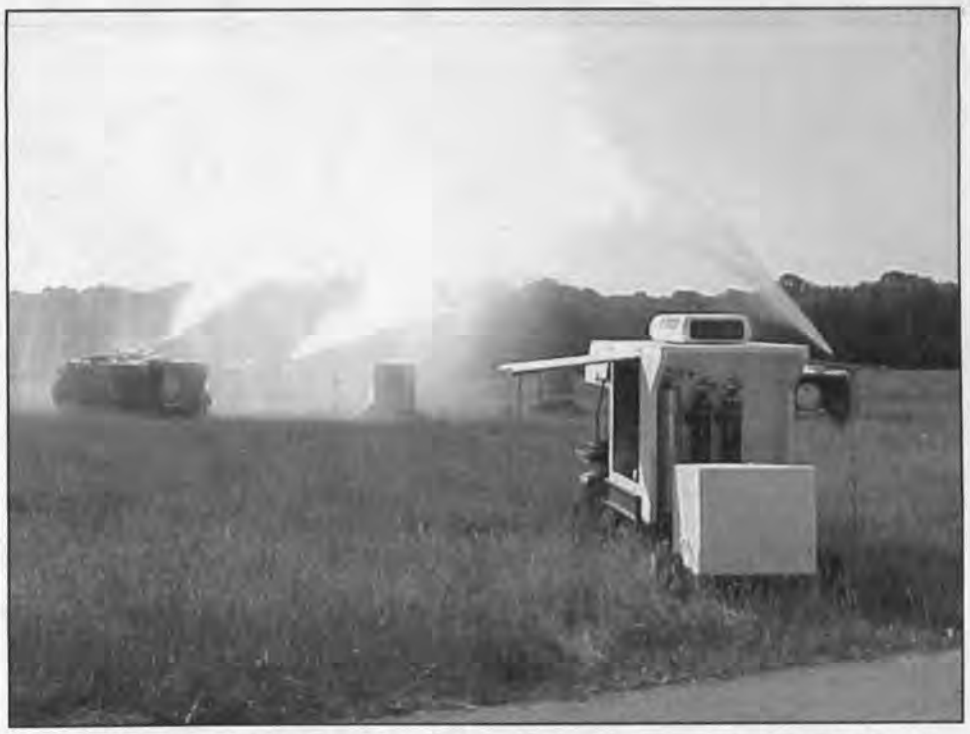
"Because of the history of this site, many believe unexploded munitions containing chemical warfare material are likely to still exist here," said Bruce Ware, resident engineer with the Corps' Environmental Remediation Resident Office. "Given this and the site's close proximity to homes and schools, Congress and the Department of Defense identified the Lauderick Creek Project as a priority project."

In planning for the Lauderick Creek project, Corps experts re-examined a similar ongoing ordnance investigation and removal action in the Spring Valley neighborhood of Washington, D.C., the nation's first clean-up of chemical munitions in a residential area.

Archival information indicate that Lauderick Creek and Spring Valley share a similar history. According to records, Army personnel conducted similar research, testing, and training with chemical warfare materials at both sites. The Spring Valley site, then called the American University Experiment Station, was used from 1917 to 1919. When the experiment station closed in 1919, the remaining warfare materials were transported to the new chemical school at APG.

Today, the two sites once again share similar activities, but with a much different intent. As cleanup activities move forward at both sites, the Corps has adopted similar cleanup procedures that involve special safety measures, carefully planned work activities, and the need for effective community outreach and education.

A typical dig-site set-up at Aberdeen Proving Grounds includes a small steel shelter, a cluster of air monitoring sensors, and M-113 armored personnel carriers equipped with water sprayers. (Photo courtesy of Human Factors Applications)



In case of a chemical weapons explosion, a water spray curtain for the armored personnel carriers would reduce the toxic plume. This is a system test. (Photo courtesy of Human Factors Applications)

When these procedures were in place, the Corps conducted a geophysical survey of the Lauderick Creek site in 1996 and 1997 and identified 20,000 magnetic anomalies. During the years, experts have removed both conventional and chemical-filled ordnance items from the site. Experts say that if chemical munitions *are* found, they are most likely to contain phosgene gas and mustard gas.

"Working closely with our many installation, state, and local partners, we've prepared and are following plans that are targeted to meet the risks of this type of clean-up," said Ware. "So far, our field activities are working as we planned."

According to Roger Walton, a Corps project engineer, the actual removal work involves a number of carefully planned steps and specially designed pieces of equipment.

Each dig is monitored from a remote location using video and air detection equipment. Before each dig, a small, three-sided metal structure designed to stop metal fragments if a munition detonates is placed over the spot. Ordnance experts with Human Factors Applications, working inside the structure, carefully dig with non-sparking hand shovels to a maximum depth of three feet to identify the suspect anomaly.

For added protection, three M-113 armored personnel carriers equipped with water sprayers circle the dig. If chemical agent is released, water sprays would dissipate the toxic plume. Warning sirens are used with this system to alert surrounding communities to a potential chemical release.

If an anomaly is a munition, the Army's Technical Escort Unit, headquartered at APG, will be called to the site to assess the round. They will decide the best procedure for removing it.

"The stability, direction, and speed of the wind are important factors in whether or not we dig in a particular area on a particular day," said Walton. "It's important that we maintain a safety buffer between the spot of the dig and nearby residences, just in case a problem should occur."

Due to public concerns about the project, the Corps and it contractors launched an intensive community outreach campaign to educate businesses and neighborhoods surrounding the site about the potential risks.

Through door-to-door visits, block fairs, and presentations in schools, the Corps and its contractors trained the local community on what to do if emergency sirens around the project area sounded, signaling an accidental release of chemical material at the site.

If this occurs, residents have been instructed to shelter-in-place. This involves three simple steps. They go inside quickly and stay off the phone, close all windows and doors and turn off air conditioning or heating systems, and listen for instructions on the radio. To remind the public of the shelter-in-place measures, brochures, posters, and bookmarks were distributed to residents, businesses, and area schools.

During the remainder of the project, the public will receive daily updates on activities through the Internet, telephone information line, and a mobile community office which is dispatched daily to key locations in the community.

"To date, workers have recovered two liquid-filled 4.2-inch mortar rounds, 125 pounds of ordnance-related scrap, and 400 pounds of miscellaneous scrap and construction debris," said Walton. "One mortar rounds has been found to contain water and sand. The other round is awaiting testing by the Technical Escort Unit."

The Corps' original contract schedule estimated the project would be complete in about two-and-a-half years. However, Corps officials and others agree that weather conditions and demands on resources will play a major factor in achieving this goal.

Flames 100 feet high, temperatures more than 1,000 degrees

Ranger is backcountry firefighter

By Ann Marie Harvie
New England District

Mark Rosenthal, project manager at North Hartland Lake/Union Village Dam for 10 years, knows all about fires. He has seen flames 100 feet high, covering hundreds of acres, and he wasn't watching them on television. More likely, his coworkers at New England District were watching *him* on the national news, not as a park ranger in his usual uniform, but as a volunteer wildland firefighter in flame-retardant clothes.

Rosenthal has been involved with wildland fire suppression for about 11 years. He has also been involved in prescribed burns (fires purposely set to achieve a natural resource management goal) for about 20 years. The U.S. Forest Service has certified him as a Burn Boss. He also sits on the Corps' Fire Management Task Force that is currently developing standard operating procedures for training and managing prescribed burns and other types of suppression operations.

Life and death details

Rosenthal's first fire was in 1989 at the Roosevelt National Forest in Arizona. He began as a firefighter, digging fire lines and operating the hoses. After a couple of seasons, he became a sawyer (a firefighter who cuts trees) for the ground crew. From there, he became a squad boss, responsible for a small team of six-to-eight firefighters, and soon after he became a crew leader, responsible for 18-to-20 firefighters.

According to Rosenthal, a crew leader's job is extremely detailed. "Your job starts from the minute you get the call, which is more often then not in the middle of the night," he explained. "You're responsible for picking up the crew, their transportation to the incident, food, and lodging if needed on the way to the site."

Mark Rosenthal (first row, first person on left) and his firefighting crew. (Photo courtesy of New England District)

When the crew arrives at the site, the crew leader must inform the incident commanders of the operation that the crew has arrived and is ready for deployment. The incident commanders give his crew camp layouts, maps, food, and equipment.

"Once you've checked in, you're on shift," Rosenthal said. "Then you're also responsible for getting your people to their designated work site, and you have to take care of the timekeeping, medical, safety, and human resource part of the job."

All of this on top of being on the front lines with the crew fighting fires and constantly monitoring the crew's safety, which is the top priority. Part of keeping a crew safe is knowing what the fire is going to do before it happens, referred to as "fire behavior." Detailed courses in fire behavior are necessary for crew leaders.

"Fire behavior is kind of like defensive driving," Rosenthal said. "You're trained to understand it and, by the time you become crew leader, you're experienced enough to factor in all the variables, such as weather, wind, fuel type, terrain type, and crew condition to know if the site is safe."

Task force leader

Crew leaders are cheerleaders, trainers, and sometimes peacemakers. "We get teams that are made up of different personalities and different cultural backgrounds," said Rosenthal. "Sometimes you have complete strangers thrown together for weeks at a time in a stressful situation."

This year, Rosenthal qualified to become a task force leader. Task force leaders get a specific job and various resources to accomplish it. When in Nevada, Rosenthal got the task of initial attack on all fires in the northeast corner of Elko County, which covers about 3,000 square miles. He got three bulldozers, fire engines, airplanes, helicopters, and three crews to accomplish the task.

In Montana, he managed two crews, 10 pieces of mechanized equipment including bulldozers and helicopters to deal with a section of one large fire. However, there was another factor in the Montana situation — the habitat of the Canada lynx and bull trout (both on the endangered species list) was at risk. All tactics used on this fire had to protect the remaining habitat. "You've got fire on both sides of you, you have to keep your crew safe, and protect the environment all at the same time," Rosenthal said.

Coyote out

Rosenthal also said that there is often little time to rest when fighting fires. It is not unusual for crews to work 14 to 16 hours a day. On occasion, crews will "coyote out" — spend the night on the fire line sleeping in the dirt and eating MREs (meals ready to eat).

Once the fire detail (which can span as much as three weeks) is completed, the crew leader must go through the demobilization process. This includes filling out the appropriate paperwork for each crewmember, providing transportation and, if needed, a hotel for the night.

Fighting fires of any type is dangerous work, but Rosenthal says there is a significant difference between fighting structural fires and wildland fires.

"People don't realize how immense these fires can be," he said. "We're talking flames more than 100 feet high with

Continued on next page

Bikes bring rangers close to visitors

Article by Steven Whetzel
Photo by Jonas Jordan
Savannah District

Patrolling on bicycles makes park rangers at Hartwell Project more accessible to visitors. Above, park rangers Scott Kelley and Sandra Campbell talk to Jimmy Dixon (far left) from Starr, S.C., and his grandson, Caleb.

If the patrol truck you drive is a barrier between you and your customers, the logical thing to do is get rid of the patrol truck. So that's what rangers at the Hartwell Project did. They added three mountain bikes to their patrol fleet, and the customers love it.

"This is the first time I've spoken with a park ranger," said one park visitor. "I always see you guys driving by, but I really like having you this accessible."

The park rangers say that's a common reaction to the bike patrol. So is, "Now that you're here, let me ask you a question."

"We had at least one bike (most often two) out on patrol every weekend during the summer," said Sandra Campbell, chief ranger at the Hartwell Project. "We envision that eventually the bike program will be incorporated into everyday patrol. We ride when our areas are open. Our campgrounds begin opening in March, the major day-use areas open in April, and the season ends in late fall."

The idea of patrolling on bikes came in response to a customer satisfaction survey that is conducted annually at Hartwell. Campbell said the bike patrol program was an obvious solution to improving the public's perception of staff helpfulness, ranger accessibility, safety, and security. "The program was not only inexpensive to implement, but also easy to staff," she said. There was no shortage of rangers willing to participate.

Before implementing the program, the park rangers surveyed other U.S. Army Corps of Engineers projects. They wanted to benefit from the experiences of those already using mountain bikes in their Visitor Assistance Program.

"Although there may be other projects that utilize mountain bikes, the Cape Cod Canal in Massachusetts was the only Corps project we could locate using them to their full potential," said park ranger Tim Crabtree. Employees at the two projects exchanged information for about two months.

Hartwell purchased the bikes last April and sent six park rangers to a two-day training course sponsored by the police department of Clemson, S.C. The course provided practical information on fitness and exercise, nutrition and hydration, prevention of injuries, and the technical skills needed to ride safely in high-traffic areas of the park.

Ten of Hartwell's 24 rangers are on the recreation team, but their numbers increase during the summer months (the peak visitation period) when summer rangers, and park rangers from the shoreline and lands management team join their ranks.

"We have six additional rangers who want to train for the program this fall," said Campbell. He also noted that the program is voluntary.

It's also not very extensive. Hartwell Project was able to get three Trek mountain bikes (the law enforcement model), three bike carriers (to transport the bikes on vehicles), equipment bags, water bottles, various tools for repairs, and personal protection equipment (helmets, gloves, riding pants etc.) for seven rangers for only $2,400. The bikes, helmets, equipment bags, and water bottles bear the ranger decal.

The bikes are carried on the back of the patrol vehicles and are easily unloaded for use when the rangers enter the parks.

"The benefits realized from using the bikes have more than exceeded our original expectations," said Crabtree. "From the first day they were put into service, our visitor contacts increased more than 100 percent."

The bike patrol has also caught the attention of many young visitors to Lake Hartwell. Many conversations with children start over what type of front shock or derailleur is on the bike. The rangers use these opportunities to teach not only water safety and bike safety, but also environmental stewardship.

"Children are no longer afraid or intimidated by the uniform," said Campbell. "They will approach us and ask questions about the bikes, wildlife, or directions. And some have even asked for the ranger's autograph.

"The benefits received from such a small investment is what makes this program such a success," continued Campbell. "The benefits are multi-faceted — high visibility, direct customer interface, visitor assistance, information dissemination, and a fitness workout for us — all at one time! It doesn't get any better than this!"

Firefighter

Continued from previous page

five or six thousand acres on fire. With structural fires, you deal with one or two structures. With wildland fires, you dealing with every type of fire situation."

Family

When Rosenthal and his crew answer the call, he is often gone from his family for weeks at a time. He has missed birthdays and anniversaries, but he says his family supports the work he does fighting fires. "My family thinks it's kind of cool, and they've learned to deal with problems that sometimes occur while I'm away," he said. "I wouldn't be doing this if they didn't support me."

Rosenthal's co-workers at North Hartland Lake and Union Village Dam, and his supervisor, also support him when he's out fighting fires, and take on extra work that can't wait until his return. "I've sat down with them and asked them if it would be a problem," said Rosenthal. "They've been very supportive."

"I'm very impressed with the efforts of both Mark and all the members of the Green Mountain unit, for giving up their free time, and risking their personal safety to protect others' property," said park ranger Roxanne Barbeau.

Voluntary

Firefighting is voluntary, and Rosenthal goes on leave without pay when he is away from the district. There is a national fire program that involves the cooperative efforts of many of the natural resource agencies, such as the U.S. Fish and Wildlife Service and the U.S. Forest Service. The agency in charge of the particular fire that Rosenthal works on pays the volunteers, but it is a significant pay cut.

Rosenthal has worked with many people from diverse cultures all over the world and has had many interesting experiences.

"On one fire in California someone on our crew dug up a cache of arrow heads," he said. "The archaeologist on the crew felt the cache was about 400 years old. Well, it turns out that the valley was the home valley for a Native American named Ishie. I remembered reading a book titled *Ishie, the Last Yahi Indian*. It turns out that this was his home valley and the arrow heads probably belonged to one of his people."

Skills and experience

Rosenthal said that when he returns to Vermont after a detail, he brings his experiences back with him and applies them to his job as a park ranger.

"I perform prescribed fires every year," he said. "Anyone doing this sort of work should expect that a fire might get away from them, and they need to know suppression tactics if it does happen."

"Mark's work with the Forest Service has taught him skills and offered him training opportunities that he has brought back to the district and applied to both prescribed burn programs here in the district, and with other government agencies," said Barbeau. "Also, I've observed in his day-to-day work as a manager, he seems to have developed more patience with co-workers, and is better at putting things in perspective, quite possibly a result of his work supervising others on fire lines."

If called again to fight a fire, Rosenthal said that he would definitely go. "The service to the nation is very important to me," he said.

'I think my strengths are my people and communication skills.'

Continued from page one

awhile, investment in science and technology to get a vision of the future, and developing a force that we'll begin to field about 2008. It also means fielding an interim force to fill a gap between our light and heavy forces. That's on a fast track, and we're fielding the interim force now.

What does the Army Transformation mean for the Corps? Our organization, as part of the Army, will be a key player in enabling the Army to transform. We've always played a big role in the institutional base by housing the Army, and building quality power-projection platforms, and I think we'll continue to have a key role in that.

Update: *When you assumed command, you mentioned that your wife played a role in you deciding to go for this job. Please elaborate on that.*

Flowers: We've been in the Army now for 31 years, my wife and I. By the time we got to Fort Leonard Wood, we had 22 moves in our career. And so we were discussing the future, and I was sort of on the fence about whether I should retire or stay on. That was about the time the board was meeting to make recommendations to the Chief of Staff of the Army about the next Chief of Engineers.

And about February, I think, the first stories broke in the *Washington Post* about the Corps of Engineers. My wife approached me and said, "You know what this controversy means, don't you?" And I said, "No." And she said, "Well, it means you *have* to go for the job. I think the organization could really use you and the type of person you are."

That was the first time she's ever encouraged me to really go after a particular job.

Update: *You once worked in Portland District, but that's not mentioned in your biography. When were you in Portland District? What did you learn there, and how have you applied it elsewhere?*

Flowers: I served in Portland District from 1976 until 1980, when I was a senior captain. I made major while I was there. I was very fortunate to work for two years in a very large area office at Bonneville Powerhouse. I spent a year in construction, a year in contract management, and then the district engineer moved me to the district office and I worked in Planning Branch. I was a project manager on a regional environmental study for the Columbia and Snake River Basins. So I had a great experience. I learned a lot about the Corps' civil works mission, and had the opportunity to ply my trade.

One thing I learned was about the top-quality civilians we have in the Corps of Engineers. It was my first opportunity to interface with the civilians in the Corps. I found they are tremendously dedicated and hard-working people, and I made a lot of friends. And they were very open to mentoring me and teaching me what they knew, and that enabled me to really embrace the Corps and the ethos of the organization.

Plus it was an opportunity for me to apply some of the skills I had acquired through education and other experiences I've had.

I think those were the really big take-aways. I really gained an appreciation for what the Corps is about, how important the civil works mission is, and a sensitivity to a number of issues that I think still exist in that part of the country.

Update: *Every new Chief of Engineers revisits the Corps' vision. Can you give us any early thoughts on how you view the vision, and what changes you might make?*

Flowers: I was on the team that helped the 49th Chief of Engineers, Lt. Gen. Ballard, transition into office. I participated in developing the current vision, so I don't think there's going to be much change. In the short term, I think we'll work on how we work the vision, its application, and updating where we are.

I'm amassing a team of Corps members, former Corps members, some of our partners, and some stakeholders to advise me as I go though my own transition about what changes, if any, we need to make. We've already discussed some of that at the Senior Leaders Conference. My intent is to take a little time to think about it. We'll empower people now, but I want to take a little time, and on or about the first of April we'll publish a document that will outline my plans and the plans for the Corps for the next few years.

Update: *Where did you get your idea for the "Just Do It" card? Have you used it in other commands, and what were the results?*

Flowers: I first used the "Just Do It" card when I took command of Fort Leonard Wood in 1997. We had a tough job to do. We were growing the post by about 50 percent in the next year; we were bringing onboard two additional branches, the Chemical Corps and the Military Police Corps; executing some $300-plus million in construction; and expanding the services that we needed to provide.

I realized that you can't do a job that big if you remain centralized, and that people would have to operate independently with an intent to get things done. My predecessor at Fort Leonard Wood, Maj. Gen. Gill, had also used a "Do It" card. What I did was to apply some added emphasis when I got there, and really encouraged people to use it to make things happen.

And it got results. We stood up the Maneuver Support Center on time and under budget, and the after-action reviews from the people involved were very positive. That operation is being used as a model for future base realignment and closure moves, as a case study on how you should do things.

Update: *You talked about synergy at the Senior Leaders Conference and during the first town hall meeting at Headquarters. Did you learn about synergy at the Maneuver Support Center?*

Flowers: It came up when we were doing the first series of meetings for the new Maneuver Support Center. We had some pretty diverse groups we were trying to bring together. The MP Corps, the Chemical Corps — they each have their own ethos, which are both different from the engineers' ethos.

"My name is Bob Flowers, and I'm very proud to be the 50th Chief of Engineers. I lead an organization that's made up of some very dedicated soldiers and civilians, some 35,000 or so, who are working around the world for the Army and this nation. And there isn't any job you can give us that we can't accomplish."

That's when we came upon Stephen Covey's definition — "Synergy is the fruit of thinking win-win and seeking first to understand…It's not compromise…it's the creation of third alternatives that are genuinely better than solutions individuals could ever come up with on their own." (***Editor's note:*** *Stephen Covey is the author of "The Seven Habits of Highly Effective People," and "First Things First."*)

We wrote out that definition, required everyone to memorize it, and said "OK, now here's an opportunity to work it." Synergy became a word everyone talked about, and guess what? It worked!

Update: *The Corps has gotten a lot of negative press lately. Do you have any early thoughts on dealing with that and refurbishing the Corps' image, both internally and externally?*

Flowers: Any organization as large as we are, and involved in as many things as we are involved in, is going to get negative press. So I don't think you should overreact when you get negative press.

We're better off if we can get our customers, our stakeholders, and our partners to tell our story. We have to tell it as well, but I think that other people telling it for us is where we'll do best. So what we're going to work on is a campaign to do just that. The goal is to inform the American public on who we are, and what we're about, and why we're needed. Who delivers the message, and to whom, is something we'll work on as we develop this plan.

I really believe in being ***pro***active about this, rather than ***re***active. The tendency, the comfort zone, is to react when negative press occurs. I want a steady, ongoing, ***pro***active campaign of providing accurate information out there about the Corps and what we do, and to work very hard at having others tell our story for us. And we have to do that externally and internally.

More to follow on that.

Update: *At the Senior Leaders Conference, you indicated that strategic communication is one of your initiatives. Please define what strategic communication means to you, and why it is so important.*

Flowers: Part of the plan to be published about the first of April will address just that. It became clear to me after the Senior Leaders Conference that we'll have to define very clearly for everyone what strategic communication is.

This may change as we go through the process but, right now, to me strategic communication is the means you use to disseminate and provide information. It also means gaining feedback on how well things are being received and how we're doing.

Internally, you have to set up a mechanism to communicate freely up, down, and across the organization. We may have to create some sort of liaison or matrix or organization to do that. The project delivery teams that exist in the field now are great examples, I think, of how you can cross-talk, cross-fertilize, and share ideas internally to get better products and to work more efficiently.

Externally, we have organizations that we have traditionally worked with. I think we have to define the type of communication that we need with those traditional partners, with the stakeholders who are our clients and customers, and with the public in general. The message may vary, depending on the region you're working in. There will be some national messages, but others will be regional, and some even local.

The key is that everyone who is a member of this organization knows what strategic communication is, the role that they play in carrying the message, and then that they *do* that. And that's both internally and externally.

Update: *You're moving from a mostly soldier environment to a mostly civilian environment. What impact, if any, will that have on your leadership style?*

Flowers: Probably, it won't change my style of leadership at all.

When I joined the Army, I had no intention of staying. I was going to do my time and get out. But something happened during my initial assignment. I kind of fell in love with soldiering and with soldiers.

When I got assigned to Portland District in 1976, I had been in the Army about seven years. That was my first opportunity to work with civilians, and the same thing happened. I liked 'em and fell in love with the way they worked and with their dedication. So when I came back to the Corps as a division commander in Vicksburg, it was like coming home, in a lot of ways. I found I didn't have to change my leadership style to be successful and, in fact, I wouldn't know how to do that.

So what you see now is the same leader with the same style that commanded the 20th Engineer Brigade, that commanded the Mississippi Valley Division, and that commanded Fort Leonard Wood.

Lt. Gen. Bob Flowers' wife, Lynda, influenced him to go for the Chief of Engineers job. Above, they are aboard the New York District vessel *Hoking* during a recent inspection tour of New York Harbor. (Photo by Peter Shugert)

Update: *Why do you drop people for push-ups?*

Flowers: First, I think it reduces the stress level when you can have a little fun with each other. So I do it for that reason. It's also an attention-getter, and push-ups are good for you!

Update: *At the Senior Leaders Conference, you said that everyone should have a 30-second commercial that defines what he or she does for the Corps of Engineers. What is your 30-second commercial?*

Flowers: My name is Bob Flowers, and I'm very proud to be the 50th Chief of Engineers. I lead an organization that's made up of some very dedicated soldiers and civilians, some 35,000 or so, who are working around the world for the Army and this nation. And there isn't any job you can give us that we can't accomplish.

Update: *We realize that your plans are still firming up. But can you give us a preliminary idea of what you want to accomplish, and what you want the Corps to accomplish, during the next six months, and during your entire tenure?*

Flowers: It takes about six months, I think, for an organization to reflect the personality of its leader. My intent is for that six months to allow the transition to take place, for people to get used to the "Just Do It" card, to being empowered, and to pushing support to the field.

Long term, we'll set up a campaign that everyone can see themselves in, and will understand their role and what they can do to contribute. Then we'll go about doing that so that four years from now people will look back and say the Corps is providing excellence with integrity, that we've been wise advocates for water resources, that we've been excellent stewards of the environment, that we always sought consensus, and we did what was right.

Update: *Whenever a new boss comes onboard, people want to know what his hot-buttons are.*

Flowers: Complaining without having a suggestion. I think complaining is a morale breaker, contributes to dissatisfaction, and is not helpful. If you're really interested in seeing your organization get better, then tell somebody what you would do if you were in charge. Now, you may not be able to think it all the way through, but that's OK. Go ahead and present your idea — "Here's what I've thought through, and I've gone as far as I can. I'd like to see this continue."

My intent is to open it up and allow some way for everyone in the Corps to be able to do that. That's part of that strategic communications piece, and I'll work on that some more.

My other hot-button is any discrimination or intolerance. I won't permit that.

Update: *What do you enjoy doing in your free time?*

Flowers: Playing golf, spending time with my family, reading, and getting out to sporting events when I can make it. And I run and do PT, but I'd be lying if I told you I really enjoy it. I do it because I need to.

Update: *Are there any first messages that you want to send to the folks in the field?*

Flowers: Absolutely. First is a message about my predecessor, the 49th Chief of Engineers, Lt. Gen. Joe Ballard. We told him four years ago, when we were working on the transition, that we really needed to turn the ship a little bit, turn it into the wind, and to give the organization a sense that it was the master of its own destiny. The outgrowth of that was the regional business centers, seeking growth opportunities, and so on.

It took a leader with a strong personality, who was willing to put his finger in peoples' chest, to force change, to make things happen. We owe him a great debt of gratitude, because it was him doing what he did then that enables me to do what I'm launching into now. That couldn't be done without a leader like Lt. Gen. Ballard getting this organization in the shape it's in today. No one else could have pulled off the reorganization of the Corps and gotten us to the eight-division organization we have now. He did that, and I see, at first look, very few organizational changes that need to be made to accomplish what we'd like to accomplish for the future.

And the other message I'll send is that this is an impressive organization, and that the people we have are good. And my initial impressions are all positive. I think we have an extremely bright future, and I'm optimistic that we're going to be able move from being a relevant organization to the Army and the nation, to being an *absolutely indispensable* part of this country.

Turtle rescue

Corps of Engineers helps turtles win race for survival

Article and Photos
By Jim Edwards
Portland District

On a fall morning in the Willamette River Valley, a group of baby turtles prepared to run for their lives. Barely as big as a quarter as they emerge from their nest, the turtles are just a bite-sized snack for predators like bass, bullfrogs, and foxes.

But these little western pond turtles have a big ally in their race for survival — the U.S. Army Corps of Engineers.

That morning, Kat Beal, a Corps wildlife biologist at the Fern Ridge Project, along with Corps park rangers, and wildlife experts from Oregon's Department of Fish and Wildlife, were on a mission to give the turtles a head start.

"Turtles have been in Oregon for ages," said Beal. "But in the early Nineties the Oregon Natural Heritage Program identified the western pond turtle as a rare species, potentially in decline." Turtle populations were dwindling throughout the Northwest, but one roadblock to protecting them was the lack of data documenting the decline.

Early intervention

So Beal and the managers of the Corps' Willamette Valley Project took an active interest in the turtle. "Something we learned from the spotted owl experience is that it's a lot easier to deal with a species before it becomes endangered than afterward," Beal said.

Working with Oregon's Department of Fish and Wildlife, Beal organized a Corps project to identify the turtle's populations and nesting sites at Corps projects in the valley, and to find ways to prevent or reverse their decline.

The turtles lay their eggs in clutches, a cluster of eggs in a small hole carved out by the mother in the middle of the night. "The first stage is to find the clutches," said Dan Troglin, Chief of Portland District's Natural Resource Management Section. "Believe me, this is an art. They look like little muddy spots on the ground."

Once the nests are located, they are protected from predators with small mesh covers called fences. The mesh keeps predators out, but still allows the sun to warm the ground over the nests. The trick is to find and protect as many nests as possible before hungry predators destroy them.

"Western pond turtles nest from about the first of June to the middle of July," said Rebecca Goggans, a wildlife specialist with Oregon's Department of Fish and Wildlife. "The female comes out of the water at night, lays her eggs, then has nothing more to do with the nest. The next day Kat goes out and fences the nest."

Race for survival

"We try and search for nests every morning," said Beal. "We were finding a lot of nests that had already been predated (destroyed by predators)." The biggest problem at Lookout Point and Fall Creek appears to be gray fox. "We think the foxes watch the females lay their eggs, then predate them." At Fern Ridge, the predation seems to occur within the first two or three days and the problem is mainly raccoons. "So searching the morning after is effective."

Once the turtle's eggs are laid, the race begins. On one side are hungry predators with keen sense of smell, night vision, and familiarity with the land. On the turtles' side are Beal's teams. The race for whether the turtles will live or die is decided by who gets to the nests first. "In a semi-urban environment, we've found that if we search every day, we can find the nests and fence them," said Beal. "We've never had a fenced nest predated, and we've protected well over 100 nests."

Kat Beal (kneeling) and her team dig up a nest of baby turtles to save them from predators.

Once the nests are located, Beal places a small data monitor, about the size of a quarter, inside the nest to collect information on temperature and humidity during the summer incubation. One objective of the program at Fern Ridge is to learn more about what happens to the eggs during the summer. The nests are then fenced and the locations carefully marked and recorded.

Beal monitors the temperature patterns and rainfall, and Corps employees at the Fern Ridge Project check the fences over the nests to detect any tampering or changes. The fate of the turtle eggs is now up to the temperature and weather. Beal, using her meticulous records, has become a fairly accurate forecaster of how the turtles will fare and when they will hatch. This accuracy is crucial to the second phase of the operation.

Dew still clung to the grass as the team picked its way to the first cluster of nests that Beal and her team had watched during the summer. Their goal is to collect about 50 hatchlings that will be taken by Goggans to a state facility in Corvallis, Ore.

At Corvallis, state wildlife specialists put them on a fast growth diet. In two months they grow to a size it would normally take them six months to reach. The young turtles also avoid predators that feed on them. Among them are bass and bullfrogs that simply swallow turtle hatchlings whole.

"Ahhhhhhh!"

If Beal's predictions are accurate, the nest will be full of hatchlings, just slightly larger than a quarter. If she is off even a bit, there will be a dense pile of eggs waiting to hatch. The eggs can be taken and incubated, but Beal prefers that the turtles hatch and spend at least a short time in the nest in case there is some kind of scent imprinting from the soil. She explains that because there is still so much to learn about the turtles' lifecycle, the less they are removed from the normal routine, the better.

The moment of truth arrived as Beal and Goggans knelt on the muddy ground by one of the wire-mesh screens. They pried loose the stakes holding the screens and began carefully removing the dried mud plug covering the tiny

Kat Beal holds two baby turtles and a data recorder from a nest.

hole. As the first little turtle poked his head out, everyone breathed a collective "Ahhhhhhh!"

Eleven live turtles and two unhatched eggs were removed in 10 minutes. Beal handed them to Goggans, who placed them in plastic containers lined with tall grass from around the nest. The scene was repeated twice more

Continued on next page

Earning degrees tough, but worth it

Article and Photos
By Carol Baternik
Louisville District

Jeff Schaefer recently earned a Ph.D. in civil engineering; Linda Davis earned a masters degree in engineering.

Advanced education degrees earned two Louisville District employees job promotions and higher pay, but the accolades also offer a lesson in what it takes to get ahead. Initiative and the desire to learn remained key factors in Jeff Schaefer's and Linda Davis' recent accomplishments.

Schaefer earned a Ph.D. in civil engineering in May. His dissertation is on the district's Olmsted Lock and Dam project. Davis' master's degree paved the way for a promotion to geotechnical engineer and team leader in September.

Earning the degrees forced them to balance family and career. Behind the credentials that hang on the walls are lessons in perseverance and commitment.

"I didn't really want to be a secretary, but I was one," said Davis, 48. "After that, I didn't really want to stay in cartography for nine years, but I did. What I wanted was to be an engineer."

Davis' ambition took hold when she was 28, and she enrolled in college. She had no idea when she began pursuing higher education that it would take 20 years, or that is would be so hard to juggle work, family, and school. Davis and her husband Mike have now been married 29 years with one son, Craig.

"And I still did the PTA treasurer and the Boy Scout leader and team-mother things," Davis said. "I found the time because it was important to me."

She now spends her free time caring for her two grandchildren, MacKenzie, 19 months, and Malarie, four months. Many family photographs cover her workspace, but Davis is equally proud that she's giving back to a career she studied.

Schaefer, 34, has a wife and three young children. He played the roles of husband, parent, and student while enduring chest pains during one horrendous semester of his doctoral degree.

"I had 15 semester hours of 700-level classes, and my wife went into early labor near the end of the semester," said Schaefer. "We made four trips to the hospital before my daughter was born just a week before finals. I thought I was gonna have a heart attack."

Schaefer brushes off the episode with a grin and a shrug. He continued to complete his dissertation, attacking everything he had to do, leaving nothing unfinished. "The amount of schoolwork was incredible, but I really enjoyed it," he said. "My parents' discipline taught me to work hard and solve problems."

While some people grow complacent and all-knowing as they progress in a career, Schaefer experienced the opposite effect. "The more experienced I became, the more I wanted to learn," he said. "I want to be the best."

Higher pay and retirement benefits motivated Davis to make education itself a second career as she ground out semester after semester, saving money for classes a few at a time during a five-year period. "Nobody in my family went to college, but I still had lots of encouragement from home," Davis said. "I laugh, and think I should have gone to college right after high school. I didn't do it the easy way or the smart way. It would have helped having mom and dad doing the cooking and cleaning and paying the bills."

While the government cannot pay for a degree, it *can* supplement or pay for training applicable to your position, and grant time off for school. At the supervisor's discretion, your work hours can be adjusted around school schedules. Davis said she took annual leave to study and for test days, since it was simply too difficult to go straight from work to a test.

Davis faced a lot of tests while getting her degree, and learned her own ways of coping with them. "Food and study go together, especially at test time," she said, and smiled. "It takes off that crabby edge."

Schaefer spent two semesters of his doctoral program away from the workplace to focus on his coursework. He then completed his research and dissertation in two years working nights, weekends, flex days, holidays, and using annual leave.

His future plans now include "working on my 17 acres, and spending time with my kids."

Although all the money, study time, and support in the world won't guarantee a degree, having a specific reason for continuing an education will increase your likelihood of reaching graduation day, whether it takes you two years or 10.

"Make sure you want it and know what your goal is," said Schaefer. "It's too hard and too much work. You'll get so much more out of it."

The past and the future came together for Davis when her goal became apparent.

"Look at yourself," she advised. "Are you happy where you are? Can you do this another 20 years? Don't think you're in a dead end. It's up to you."

Turtles

Continued from previous page

in that area, and again at another nesting site a few miles away. Having nearly reached the day's goal of 50 hatchlings by noon, the team suspended further collections for that day.

"Collection today was very successful," Beal said. "All the nests had turtles hatched or about to hatch. That was consistent with our predictions based on temperature and rainfall. That goes along with the failures in 1993 and 1995. All those nests failed, we think because of the rainfall. The higher the rainfall and lower the temperature, the fewer turtles we get. It looks like summer rainfall is the most important factor in the Willamette Valley."

Long-term solutions

Experiences like these add to researchers' knowledge of the western pond turtle. This information may be the key to saving the turtles during the long run. But Corps project managers and Beal stress that this "Head Start" program is only the beginning of a long-term recovery strategy for the western pond turtle.

"The long-term problem is loss of habitat," Beal said. "One criticism of head starting is that it diverts resources and attention away from long-term solutions such as habitat restoration. We need to acknowledge that this is a short-term solution."

"The turtles at Corps projects changed a lot of our management schemes," Troglin said. "The best example I can give is Kirk Pond, below the Fern Ridge Dam. We were going to turn it into a warm water fishery. To be successful, we had to get rid of an aquatic weed, the Eurasian water mill foil. But we found the turtles like to sunbathe on mats which the thick weed formed on the water. So, we changed our whole management scheme. We're no longer going to create a warm water fishery; we're creating a habitat more conducive to the turtles."

After the turtles grow to a mature size, the next stage in the joint state and federal project is to release them back into the same area where they were collected. Results with released turtles are promising, even in habitats full of bass and bullfrogs.

"Survival rates were very high, indicating that headstarted turtles can function in a wild environment and are too big for at least two exotic predators to eat," Beal said.

As the Corps' knowledge of the turtles increases and work proceeds on habitat creation and restoration, Beal has her sights set on a more ambitious goal. "We'd like to use headstarted turtles to start new populations in isolated, existing habitat," she said.

For the time being, the Corps and Oregon's Department of Fish and Wildlife are concentrating on learning all they can and maintaining the current populations of turtles. To succeed, the Fern Ridge programs are vital. "Fern Ridge has the largest western pond turtle population in the Willamette Valley," said Goggans. She explained that Oregon is determined to avoid the turtles' fate in other areas.

"They are the only fresh water turtle south of Albany, and one of only two known populations of western pond turtles In Washington State," said Beal.

"The turtles here are a federal 'species of concern,'" said Joe Holmberg, a Portland District park manager. "They're not yet endangered, but if things keep going the way they are, they could be. So we're trying to increase the populations. Because the habitats around the Corps' reservoirs are good for the turtles, it gives us an opportunity to do something that will benefit them."

"The program here costs little because we have a cooperative agreement with Oregon Fish and Wildlife," Troglin said. Besides the populations at Fern Ridge, six others have been identified at other Corps projects in the Willamette Valley. This gives the Corps a unique opportunity to find answers to questions about the turtle's future, before they are past help. Beal makes it clear this is not just a cosmetic attempt at crunching numbers.

Results

"We're not just trying to fix the problem by dumping more turtles into it," Beal said. "We're committed to restoring habitat. As a person who hopes to be a grandmother someday, I want there to be wild turtles along the Willamette for my grandchildren to enjoy. I think we all have a stake in preserving our state's natural heritage."

This year, the program has gone well, which encourages Beal and Goggans. "In 1993 the estimated population of western pond turtles in Kirk Pond was 45," said Beal. "Oregon Department of Fish and Wildlife and the Corps did a trapping survey in the summer of 2000, and the population has doubled to about 90 turtles."

U.S. Army Corps of Engineers National Awards

*(**Editor's note:** Awards listed here are national Corps awards only. Army and DoD awards are not included, nor are professional society awards. The "Engineer Update" publishes such awards, but not in this special section.*

Many of the following awards were presented at the recent Senior Leaders Conference in Norfolk, Va. The Civilian of the Year Award is the most prestigious and is listed first. The remaining awards are listed in no particular order. Some awards presented last year were either not presented this year, or are biennial awards and are not scheduled to be awarded again until next year.)

Civilian of the Year Award (Lt. Gen. John W. Morris Award)

Michael Koryak, Pittsburgh District

Michael Koryak is a limnologist (someone who studies freshwater systems) and chief of the district's Water Quality Lab. He maintains suitable water quality for 4.8 million residents in New York, Ohio, Pennsylvania, and West Virginia. This includes 16 reservoirs, 23 locks and dams, and more than 40 flood reduction projects.

His accomplishments include:

- Using Office of Surface Mining funds to reduce the effect of acid mine drainage on district water quality.
- A successful 10-year project to treat the acid-degraded water in East Branch Clarion River Lake.
- Using Federal Energy and Regulatory Commission re-licensing to require a hydropower utility to provide minimum water release, which restored a dead stretch of the Clarion River.
- Volunteer mentoring and teaching in local schools.

Landscape Architect of the Year

Doris Sullivan, St. Paul District

Doris Sullivan, a registered landscape architect, has exceptional skill at taking difficult site conditions, creatively combining conflicting elements, and designing pleasing, functional projects. Her willingness to tackle tough design situations, to go beyond typical job parameters, and her care and concern for the quality of the product is noteworthy. Her professionalism, willingness to help, drive to provide high-quality products, and customer care make her a key asset to every design team.

Hard Hat of the Year Award

Tim Willard, Sacramento District

At the Utah Resident Office, Tim Willard handled $59 million in construction assignments effectively and creatively. His contribution to the Hill Air Force Base military program and hazardous, toxic, and radiological waste program earned him high praise from the Air Force. A standout example is the Medical Clinic Addition that became a showpiece project through his personal efforts.

Construction Management Excellence Award

Julie Martinez, Los Angeles District

Julie Martinez has supervised $180 million in large dredging, landfill, and deep-draft navigation projects in and around the Ports of Los Angeles and Long Beach. She was also an acting resident engineer of the Rivers and Harbor Resident Office. She is now a permanent resident engineer, the first woman in this position in Los Angeles District.

Martinez maintains an aggressive safety program and exceptional partnering programs. Her coordination skills with the sponsors earned her high marks in the district and exceptional performance ratings for the past three years.

Award of Excellence, Design

Rodman Materials Research Laboratory Aberdeen Proving Ground, Md.

This is a world-class center of excellence for materials research and development, providing a state-of-the-art research environment in 149 laboratories. The layout fosters teamwork by emphasizing the visibility of people moving through the building. A secure exterior courtyard between administrative and research space allows personnel to discuss classified work outside. The facility was designed in 60 percent of the time normally required for such a project, and built on schedule seven percent below the $80 million budget. It will save the federal government about $20 million annually. The lab has fostered successful recruitment of research staff, and technologies emerging from its research are critical to the Army of the 21st century.

Award of Excellence, Environmental and Design Team of the Year

San Antonio River Tunnel, San Antonio, Texas

The San Antonio River Tunnel is part of the San Antonio Channel Improvement flood protection project. It is about 140 feet below the surface, 3.1 miles long, about 24 feet in diameter and provides protection from a 100-year flood event. The San Antonio Tunnel, and its sister tunnel on San Pedro Creek, are inverted siphons. This is the first known use of a tunnel siphon for a major urban flood control project.

In October 1998, just months after the tunnel was finished, a record flood threatened to devastate the downtown and Riverwalk areas. Without the tunnel, the downtown would have been under about six feet of water. It is estimated the San Antonio River Tunnel paid for itself in damages prevented in this one event.

Contractor of the Year for Civil Works

Odebrecht Contractors of California Seven Oaks Dam and Appurtenances, Sherman Oaks, Calif.

Odebrecht Contractors of California successfully and safely completed this flood control project in Southern California, which will protect more than three million people and about 225,000 structures in Riverside, San Bernardino, and Orange counties. During four-and-a-half years of construction, Odebrecht maintained superb quality, safety, and timeliness. Their management overcame delays due to a prolonged bid protest, a huge rockslide, and flooding due to El Nino. Their accident frequency rate of 0.68, compared to the national average of 10.6, is a testimonial to their safety attitude.

Equal Employment Opportunity Award

Seattle District

This award is presented to the field office that has demonstrated outstanding achievement in EEO and affirmative action. Seattle District has repeatedly exceeded annual goals in hiring and promoting minorities, and resolved all EEO complaints at the district level. The district has contributed greatly to eliminating under-representation of women and minorities, especially in high-grade positions.

Interior Designer of the Year

Marsha Walkup Kansas City District

Marsha Walkup is extremely competent, respected by peers and management, and always takes large, complex assignments to a successful conclusion. Her performance reflects dedication to the profession, and commitment to strengthening the role of interior design in the Corps.

Examples include developing the Federal Interior Design Website, which she authored and sponsored as the Chair of the Tri-Service Design & Construction Field Working Group. This website is the first to unify all interior-related data for the federal community.

She also facilitated the incorporation of interior design details, symbols, and level layer schemes into the Tri-Service CADD Details Library and AEC Standards. This improves the quality of design documents, which increases construction accuracy, streamlines design time, and increases interoperability between software packages.

Natural Resources Management Employee of the Year

Tim Feavel, Alaska District

Tim Feavel received this award for his performance as a park ranger at the Chena River Lakes Flood Control Project. Feavel is an exemplary ranger, exuding integrity, competence, loyalty, and professionalism to the public and his co-workers. His outstanding stewardship of natural resources at Chena Lake helped make it a model flood control project enjoyed by Alaskans and visitors from all over the world.

Hiram M. Chittenden Award for Interpretive Excellence

Pamela Doty, St. Louis District

Pamela Doty operates the Interpretive Services and Outreach Program at Lake Shelbyville. She oversaw on- and off-site programs, special events, volunteers, workshops, and publications. In 1999, there were 8,200 more off-site direct interpretive contacts than in 1998. This stems directly from Doty's efforts to promote the

U.S. Army Corps of Engineers National Awards

Corps and its missions.

Among Doty's accomplishments, she coordinated the district's representation at the St. Louis Boat and Sports Show and the Illinois State Fair, organized a Ranger Willie B. Safe Discovery Packet to give rangers and educators information on implementing this campaign, created and coordinated the "Water Safety Messages for Shoppers" campaign, coordinated the Lake Shelbyville Aqua-fest Carnival and Kids Fishing Tournament, and implemented an Adopt-A-Trail program.

Planning Excellence Award

Amy Guise, Baltimore District
Paul Hathorn, Fort Worth District

Amy Guise led an interdisciplinary team through plan formulation to facilitate development of innovative solutions for the Corps' environmental restoration mission. She developed formulation processes to characterize, assess, and prioritize ecosystem restoration solutions on a watershed basis, including developing a mechanism to quantify environmental benefits for a variety of environmental project types. Guise furthered the Corps' greener image by coordinating with potential non-federal sponsors to educate them about the Corps' environmental programs.

Paul Hathorn is recognized for exceptional technical oversight in guiding the environmental formulation of a number of General Investigation level efforts, including reformulation of the Dallas Floodway Extension Project, preparation of the Upper Trinity Studies Programmatic environmental impact statement, and the scoping of environmental considerations for three upcoming cost-shared feasibility studies that will address watershed problems and opportunities in a more holistic basis.

Hathorn also effectively led his staff in incorporating environmental features into Fort Worth District's ongoing Continuing Authorities Program projects, placing emphasis on the development of non-structural flood damage and ecosystem restoration considerations.

Safety Performance Awards for Excellence

Pacific Ocean Division
and Humphrey's Engineer Center Support Activity

For the past three years, Pacific Ocean Division has achieved a lost workday rate 57 percent below the Corps' objective. In addition, POD's civilian employee lost time claim frequency rate has averaged 79 percent lower than the Corps' objective.

The Humphrey's Engineer Center Support Activity cut its lost time claims frequency rate in half during fiscal year 1999 and experienced no contractor lost workday incidents. HECSA also continued their in-depth inspection and evaluation of employees' computer workstations, which helps prevent carpal tunnel injuries and workers compensation claims.

Safety Performance Award for Honor

Great Lakes and Ohio River Division

Great Lakes and Ohio River Division achieved both contractor and civilian injury and illness frequency rates better than the Corps' objectives in fiscal year 1999. During the past three years, the division's civilian accident rates have been 10 percent better than Corps objectives, and their contractor accident rates have been 67 percent better.

Outstanding Planning Achievement Award

Central and South Florida
Comprehensive Review Study Team
Jacksonville District

The Central and Southern Florida Comprehensive Review Study Team received this award. The team, together with the South Florida Water Management District, crafted the Everglades Restoration Plan, which will cost an estimated $7.8 billion. The restoration plan will restore more natural water flows and hydroperiods in the South Florida ecosystem.

The multi-disciplinary team had more than 100 professionals from more than 30 federal, state, tribal, and local agencies. They included civil engineers, hydraulic engineers, biologists, ecologists, real estate specialists, community planners, and public involvement specialists.

"The team functioned without regard to agency affiliation, making effective use of our agencies' resources to ensure the highest quality product," said Stu Appelbaum, who led the team. "This was a complex effort with extreme time pressures. There were tremendous personal sacrifices."

Contractor of the Year for Military Programs

Hensel Phelps Construction Co.
Satellite Control Facility
and Technical Support Facility
Schriever Air Force Base, Colo.

The Satellite Control Facility is a two-story, 47,685-square-foot building for monitoring and controlling DoD satellites. The Technical Support Facility is a three-story, 30,816-square-foot facility to house support personnel and Schriever Air Force Base mission offices.

The Air Force was able to fit up the facilities and start operations several months ahead of schedule. The goal of "No Claims" was achieved, and the project saved $50,000. The contractor also completed more than 297,000 man-hours of work with no lost-time accidents.

Architect of the Year

James Bristow, Fort Worth District

James Bristow received this award for excellence in architectural design. He has led a design team on four projects — the Enlisted Barracks Complex at Fort Sam Houston, Texas ($16 million); the General Instruction Facility, Phase I, at Fort Hood, Texas ($12.8 million); the General Instruction Facility, Phase II, at Fort Hood ($13.2 million); and the team is presently designing the Soldier Service Center at Fort Hood ($16.5 million).

Of these projects, three were congressional inserts to fiscal year programs, and design start and construction award occurred in the same fiscal year. Executing these inserts represented a significant challenge. None of the projects were standard designs or site adaptations, all were multi-user, multi-story educational buildings. Fort Worth District met these challenges, and Bristow is a primary reason.

Real Estate Professional of the Year

Lon Larson, Omaha District

Lon Larson's leadership and management abilities enabled him to achieve success in a variety of areas. He directed the Buford Trenton Irrigation District, N.D., land acquisition project, achieving 100 percent execution for fiscal year 2000. He served as acting chief of Real Estate Division in Kansas City District for four months, and continued to support some of his Omaha duties. He directed the first phase of the politically sensitive Pierre-Ft. Pierre, S.D., Flood Mitigation Project.

Larson is also serves as a colonel in the Army Reserves, and a member of the Corps Real Estate Support Team (CREST).

Natural Resources Management Project of the Year

(Tie)
Arkabutla Lake, Vicksburg District
Buffumville Lake,
New England District

The accomplishments of employees at Arkabutla Lake include 76 water safety programs reaching 8,166 people, a physically challenged deer hunt, sailing regattas, fishing tournaments, a youth raccoon hunt, and a bald eagle survey. Last year also included a memorial service for the old town of Coldwater, which had to be moved in 1939 when the dam was built. These programs and events were conducted injury-free, with a minimal staff, and reflects the project employees' can-do spirit, cooperative attitude, and dedicated performance.

Although Buffumville Lake is one of the smallest recreational and flood control projects in the Corps (about 1,270 acres), the influence of its programs on the surrounding region are immense. The staff's accomplishments demonstrated innovation for public involvement and outreach, dedication and diligence for enhancing the quality of the project's natural resources, efficiency in using financial and personnel resources, and effectiveness in visitor safety.

Public Affairs Officer of the Year

Michael Logue, Vicksburg District

Michael Logue received this award for his programs in media relations, public information, and community relations.

In media relations and public information, Logue's innovative and effective use of the Internet solved many public affairs problems and created lasting relationships with groups and individuals. His use of the Worldwide Web for strategic and information purposes has drawn positive comments from the news media and others.

In community relations, Logue increased the district's participation in the local Vicksburg community by creating a model workplace volunteerism program, and by increasing partnerships with local groups, institutions, and individuals.

FUSRAP celebrates third anniversary

This year marks the third anniversary of one of the U.S. Army Corps of Engineer's most a high-profile missions. In October 1997, Congress transferred the Formerly Utilized Sites Remedial Action Program (FUSRAP) from the Department of Energy (DoE) to the Corps as part of the Energy and Water Appropriations Act for fiscal year 1998 (FY98).

Of the 21 FUSRAP sites originally assigned to the Corps, Buffalo District received eight. Of the eight sites, two are complete, and the district is making significant progress with the other six. Buffalo District's mission is increasing and now includes investigating six sites that are potentially eligible for inclusion in FUSRAP.

In three years, the virtual team has removed and safely disposed of more than 161,000 cubic yards of material with low levels of radioactivity from the nation's early atomic energy program, without a lost-time accident. Pioneering methods like precise excavation and alternative disposal methods saved millions of dollars.

Contractors excavate contaminated soil from the Ashland 1 site. (Photo courtesy of Buffalo District)

Leader

Since then, the district's virtual team has emerged as a leader in low-level radioactive waste cleanup. The Corps' multidisciplinary FUSRAP virtual team consists of more than 100 members from nine districts, the Great Lakes and Ohio River Division, the Hazardous, Toxic, and Radiological Center of Expertise in Omaha, and Headquarters.

The Bliss and Laughlin Site in Buffalo, N.Y., was the first FUSRAP site completed under Corps management. The virtual team removed 60 cubic yards of contaminated material and disposed of it in a licensed disposal facility. Shortly after, the Ashland 2 phase of a 1998 Record of Decision was completed, with excavation and disposal of 45,500 cubic yards of material.

Work progresses on the six remaining sites. To date, the district has excavated and disposed of about 105,000 cubic yards of material from the Ashland 1 and Seaway Area D Sites, and is currently removing contaminated soil at the Linde Site in Tonawanda, N.Y. Demolition and disposal of material from Building 30 at that site is complete.

At the Painesville Site in Painesville, Ohio, the district removed and disposed of 1,330 cubic yards of contamination. The team is investigating the site and working on a focused Remedial Investigation/Feasibility Study to further identify contamination and develop cleanup alternatives.

"Buffalo District's top priority for work performed under FUSRAP is protection of human health and the environment," said Lt. Col. Glen DeWillie, district commander. "We'll continue to thoroughly investigate and clean up each site following guidelines that ensure this protection. Our investigations comprehensively address potentially contaminated soil, water, air, and buildings."

Safety

On-site safety is emphasized throughout the program. Each site has a Health and Safety and Emergency Response Plan designed to protect on-site workers and the community. On-site workers receive annual physical examinations, attend daily meetings, and wear protective clothing.

Protective clothing for workers at the Ashland and Linde Sites includes hardhats, safety boots, and suits to keep workers from getting contaminated material on their clothing. Access to contaminated areas is restricted. Each employee in a controlled area is monitored with personal air monitors and a thermoluminescent dosimeter that measures the amount of beta and gamma radiation exposure. Work areas have air monitors, and site perimeter air also is monitored to ensure protection of the community. Test results from the monitoring confirm that activities at Buffalo District's FUSRAP sites are being conducted safely.

Engineering controls such as watering down roads and excavation areas prevents the spread of potentially contaminated dust. Wind speeds are monitored to evaluate the need to stop work if the speed becomes too high, further preventing the spread of contaminated particles.

Remedial Investigation and Feasibility Studies are under way for the Niagara Falls Storage Site in Lewiston, N.Y., the Luckey Site in Luckey, Ohio, and the Painesville Site in Painesville, Ohio. The remedial investigation defines the extent of contamination and determines its risk to human health and the environment. A feasibility study develops and evaluates alternatives to address the contamination defined in the remedial investigation. Once alternatives are defined, a proposed plan with a recommended alternative is finalized and released for public comment.

During FY01, the district is scheduled to release proposed plans for the Painesville, Luckey, and Seaway Sites, and for Building 14 and the groundwater at the Linde Site. Cleanup and restoration of the Ashland 1 and Seaway Area D phase of the 1998 Record of Decision is scheduled for completion in FY01.

More sites

Three sites in Ohio were identified for potential inclusion in FUSRAP in June 1999. Under a memorandum of understanding with DoE, once a site is identified for potential inclusion, responsibility for action is transferred to the Corps. The former Harshaw Chemical Site in Cleveland; Dayton Unit III, the former Bonebrake Theological Seminary; and Dayton Unit IV, the former Runnymede Playhouse in Dayton, Ohio, are currently undergoing preliminary assessments.

The preliminary assessment is a review of available information and a site visit to determine the need for further action to protect human health, safety, and the environment. The final preliminary assessment reports for these sites were available in late September. If at any time the analysis of available information determines there is a threat, a removal action can be initiated.

The next phase for the former Harshaw, Bonebrake Theological Seminary, and Runnymede Playhouse is site inspection. During site inspection, district people perform initial sampling and analysis to further identify areas, levels, and quantity of contamination.

The Scioto Laboratory Complex in Marion, Ohio, became eligible for FUSRAP in October 1999. The district is doing a preliminary assessment and site inspection. Louisville District is project manager for this site, with Buffalo District as program manager.

Chris Hallam talks to a concerned citizen at a recent information session about the Luckey Site. (Photo courtesy of Buffalo District)

Two additional sites in Dayton, the Dayton Unit I and the Dayton Warehouse, were identified in January for potential FUSRAP inclusion. Buffalo District has started a combined preliminary assessment/site inspection for these sites.

Public involvement

The district encourages public involvement in the decision-making process for each site. The Corps must follow the Comprehensive Environmental Response Compensation and Liability Act process for site cleanup. This outlines the steps to reach a final decision for each site, and requires open involvement among the Corps, regulatory agencies, and the community. Throughout site assessment, remedial investigation, and cleanup, the district has encouraged and incorporated public participation in more than 75 events, including site tours, information sessions, public meetings, employee briefings, and presentations to local businesses and groups.

Complete administrative record files are available for public review at the district headquarters, and in selected local libraries near each site. Public meetings and information sessions are scheduled frequently and advertised in local newspapers. Interested citizens also may be added to site mailing lists upon request.

(Mary Grace Battaglia, Tara Colangelo, and Arleen Kreusch of Buffalo District contributed to this article.)

Around the Corps

Dr. Joseph Westphal (foreground), Assistant Secretary of the Army (Civil Works), signs an agreement with Wisconsin Governor Tommy Thompson (far left) and George Meyer, the Secretary of Wisconsin's Department of Natural Resources. (Photo courtesy of Detroit District)

Transfer

Detroit District recently transferred the 17 Fox River Locks near Green Bay, Wis., to the citizens of Wisconsin. Wisconsin plans to restore the system for recreational boaters, tourists, and history buffs. The area will eventually become the Fox River Heritage Parkway.

In the agreement, the Corps will give up navigation responsibility, and the state will pick up full responsibility for the locks, channels, and harbors for recreation use. The Corps will continue operating the dams for water regulation.

Since 1959, when commercial navigation use of the locks ceased, the federal government placed some in caretaker status because the government could no longer justify paying for upkeep. The state operated three locks since the late 1980s, while the other 14 were closed because they require renovation. According to the project manager, it will take about 10 years for the locks to be operational.

Corrections

The Prevention of Sexual Harassment Training (POSH) program featured in "Corps classes move to cyberspace" in the October *Engineer Update* is not yet available online.

The photos published with "Remote silos support missile defense system" in the November *Engineer Update* were from Honolulu Engineer District.

Flood control project

San Francisco District recently broke ground in Pacifica, Calif., for an innovative flood control project which pairs flood control with wetland restoration and environmental preservation. For 50 years, floods along San Pedro Creek have plagued the Linda Mar community. Rains greater than a four-year flood cause the stream to overflow. Once completed, the project will provide a 100-year level of protection while enhancing natural habitat.

Phase I construction began in September and is scheduled for completion next fall. This phase will begin creation of new wetland floodplain and riparian ecosystem. Non-native vegetation and earthen fill will be removed, and micro-depressions, wind-throw mounds, and logjam structures will be added. Almost 80,000 native plants will be planted and allowed to grow for two years before Phase II begins.

Phase II construction is slated for late 2003, and will complete the wetland floodplain portion of the project. The existing creek channel will be covered and its flow diverted into a meandering channel in the wetland floodplain. An additional 21,000 native plants will be added.

Phase III is scheduled for 2006, and features an underground bypass culvert, a diversion and energy dissipater structure, and a concrete weir. Plans call for replacing the current U.S. Highway 1 bridge, and using the current bridge as a diversion structure.

DeFleury Medal

The 249th Engineer Battalion (Prime Power) recently awarded Col. (ret.) John Addison the silver DeFleury Medal for his distinguished service record. Lt. Col. Anthony Vesay, 249th Commander, presented the award on July 14 during the battalion's Legacy Week. The battalion also named their battalion conference room after Addison.

Lt. Col. Anthony Vesay, commander of the 249th Engineer Battalion, presents a plaque to Col. (ret.) John Addison. (Photo courtesy of the 249th Engineer Battalion)

Addison served as the first battalion commander of the 249th Engineer Combat Battalion. Under his leadership, the unit distinguished itself in World War II, earning four European battle honors. The lion on the unit crest refers to the Belgian army citation awarded to the unit for its war record. From then on, the 249th was called the Black Lions.

Addison chronicled the unit's accomplishments in his recently published book, *Patton's Bridge Builders*. It noted that the 249th Engineer Combat Battalion probably built more bridges in Patton's Third Army than any other unit. Under Addison's direction, the unit built a wide variety of tactical and fixed structures, many while under enemy fire. Several of the unit's bridges played a critical role in the tactical planning of Third Army, and prompted visits by Patton during their construction.

Pacific Air Force Design Agent of the Year

Far East District (FED) is the Pacific Air Force (PACAF) Design Agent of the Year. During fiscal year 2000, FED awarded construction contracts for $100 million for the Air Force in Korea.

Colleen Chamberlain also received the PACAF Civilain Project Manager of the Year Award -- Design Agent.

FED completed design and construction of four major projects in seven months. The district received the directive on Feb. 10 to design four new Air Force major construction projects and award the contracts by Sept. 30.

To speed up the design and review process, PACAF, the base engineers, and FED participated in several weeks of design charrettes to better define and agree on scope, cost, and siting for each facility.

"Our partnership over many years made it possible to expedite these projects with professional technical support, effective communications, and great cooperation in working the schedule to achieve challenging goals," said Robert Losey of FED's Programs and Project Management Division.

Flying safety ad

Canton Lake park ranger Ray Robertson poses with the project's new water safety balloon. The 10-foot-diameter helium-filled balloon floated 135 feet above the lake last summer, reminding visitors to wear their lifejackets. The tethered balloon flew throughout the summer, except when the winds were gusting. (Photo courtesy of Tulsa District)

225 Years

'Go look 'em up!'

(This is the last in a series of true stories from the history of the U.S. Army Corps of Engineers to celebrate our 225th year. This article is from "The History of the U.S. Army Corps of Engineers," EP 870-1-45.)

Some folks accuse Army engineers of patting themselves on the back. But if they do seem a bit boastful at times, it may be because they have something to boast about.

At a convention of the American Historical Association in the late 1940s, Dr. O.J. Clinard, then the Corps of Engineers' chief historian, was in a cocktail lounge with friends. After a few drinks, Clinard started extolling the glories of the Corps and was soon reeling off a list of engineer greats:

- Sylvanus Thayer, father of West Point.
- John Fremont, pathfinder of the West.
- Gouverneur Warren, hero of Gettysburg.
- George Goethals, builder of the Panama Canal.
- Charles Dawes, vice president of the U.S. under Calvin Coolidge.
- Lucius Clay, post-war governor of Germany.

At that, a friend broke in and said, "Hold on, ol' buddy. Next you'll be telling us that Robert E. Lee and Douglas MacArthur, our greatest soldiers, were Army engineers."

Clinard beamed.

"Go look 'em up," he said.

In her day-job, Becky Breeding is a civil engineer with the Huntsville Engineering and Support Center (Photo by Kim Gillespie)

Huntsville woman plays pro football

Becky Breeding is living a dream that was not even a possibility not long ago. Breeding, a civil engineer at Huntsville Center, is the backup quarterback for the Alabama Renegades, a women's professional football team that will compete in the National Women's Football League.

And the Renegades do *not* play flag football or touch football. They play the real thing — pads-smacking, helmet knocking, sweaty, bruising, *tackle* football.

The Renegades and the Nashville Dream, the nearest franchise team, are now playing their six-game exhibition season. They will join franchises in Atlanta; Philadelphia; St. Louis; Washington, D.C.; Pensacola, Fla.; New York City; and the Greensboro, N.C., area for a 10-game regular season beginning next March.

All-around athlete. Breeding is an all-around athlete who played on the softball and swim teams in high school, and the volleyball team at the University of Alabama-Huntsville. She continued to play on intramural teams after college. She played softball and ultimate Frisbee last summer, and still plays volleyball once a week.

Breeding got into professional football last August when she responded to an ad for try-outs and was selected as backup quarterback for the 38-woman team. The job is truly professional. The players are paid according to ticket sales, plus shares of any net revenue surplus at the end of the season, although all the players still have to keep their day jobs.

"I know a lot of the other players from the other sports I play," Breeding said. "We all work during the day, so the hardest part is making practice every day while still playing other sports. Working here at Huntsville Center and having to travel so much also makes it difficult for me, but it's worth it!"

Contact sport. Like Breeding, many of the team members had played flag football as an intramural sport or for fun, but this was their first experience in pads.

"The fact that we are now playing 'contact' football was an easy transition for everyone on the team," Breeding said. "Most of us had already played contact sports like soccer and basketball. I definitely get hit playing quarterback. It was kind of a shock the first time, but you get hit and you get up and go on. I'm not even worried about getting hurt. The only thing is if they take out my knee, but it happens. So I just go out there assuming I'm *not* going to get hurt."

Ray Quinn is the owner and head coach of the Renegades. He is assisted by Ray Greene, former Alabama A&M head coach and current assistant coach of the Tennessee Valley Viper arena 2 football team. Women playing football has been a new experience for coaches and players alike.

Becky Breeding (number 10) takes the field with the Renegades. (Photo by Kim Gillespie)

Becky Breeding throws a pass against the Nashville Dream. (Photo by Kim Gillespie)

"I don't think our coaches knew what to expect, coaching a women's team," said Breeding. "We surprised them with our drive and intensity. Coach Greene has also commented that we learned a lot about the game in a very short time."

The team's first pre-season game (a road game) with the Nashville Dream was played Oct. 13 in front of more than 1,500 fans. The Renegades lost 30-15 and Breeding didn't see any playing time, but she was even more excited about the league after participating in her first professional game.

"Backup quarterback is a tough position to play when you're as competitive as I am," Breeding said. "I know I could fill in at another position, but the coaches don't want their backup injured. So my job is to stay ready.

'We play hard!' "I've never been a good spectator," Breeding continued. "I'd rather be playing. But I enjoy the people. Teams like these are things that build friendships. If you've ever played an organized sport, you know that you go through a lot with the team. This is *not* a rec league, so there's a lot more heart, a lot more competition. I think anyone who likes football will enjoy watching us. Whether it's men or women, the object is to play hard so you win. And we play hard!"

Breeding also noted that the presence and publicity of a women's professional football league might inspire more young women to pursue the sport, much like women's professional basketball and soccer teams have.

"I never thought I'd get to play football," said Breeding. "I wish I'd been able to earlier. There are so many opportunities now. That was one thing that always made me mad growing up. Boys had pro basketball, football, hockey, everything. But girls just had tennis or golf. There was never that opportunity like there is now with the WNBA and soccer, and now football, too. I'm just glad I got into the beginning of it, and I hope it keeps growing."

Winning and losing. Whether women's professional football keeps growing or not, the Renegades and the Dream are playing hard in their preseason games. The Renegades hosted their first home game against the Dream on Oct. 28. The Renegades lost again, 26-6, and Breeding got to quarterback the last five minutes.

The Renegades got revenge on Nov. 4 when they beat the Dream 13-5, but Breeding didn't see any playing time in that game. On Nov. 11 the Renegades again beat the Dream 25-14, with Breeding playing on the specialty (kick-off and kickoff return) teams. She also played a couple of series at quarterback.

On Nov. 18 the Dream won again, 26-6, with Breeding again playing on the specialty teams, and at defensive end.

As of press time, the final game of the preseason was scheduled for Dec. 2 in Huntsville.

(Kim Gillespie of the Huntsville Engineering and Support Center, and Beth Skarupa, staff writer for the "Redstone Rocket," contributed to this article.)